## FIG. 1



101 ROTARY ENCODER GROUP

102 PUSHBUTTON SWITCH GROUP

104 CONVERSION TABLE

103 PASSWORD CONVERSION UNIT

105 PASSWORD AUTHENTICATION UNIT
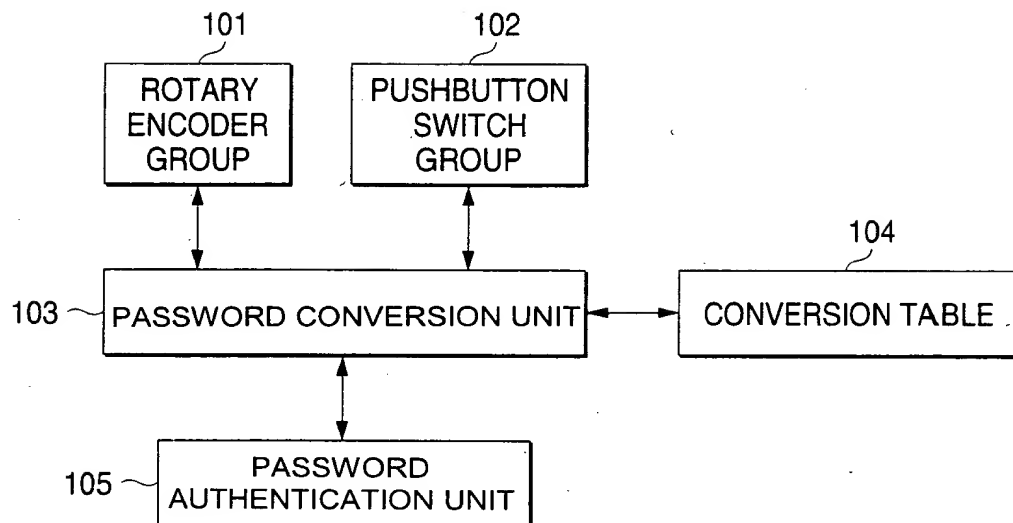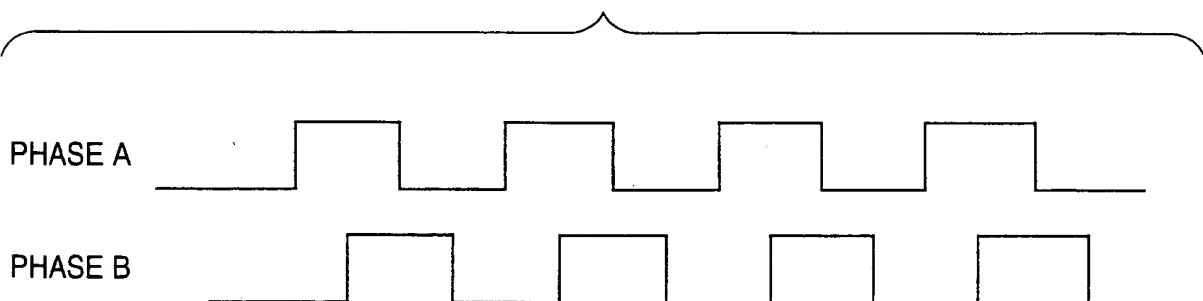
## FIG. 2



PHASE A

PHASE B

*FIG. 3*

PROCESS EXAMPLE 1

| INPUT DEVICE | ROTARY ENCODER PROVIDED WITH A SWITCH |
|---|---|
| INPUT OF A NUMERIC VALUE | NUMBER OF CLICKS OBTAINED UP TO A PUSH ON THE SWITCH BY CLOCKWISE ROTATION FROM THE START POINT (THE CURRENT POSITION ASSUMED WHEN THE SWITCH IS PRESSED IS A NEW START POINT) |
| DETERMINATION OF INPUT TERMINATION | VIA TOTAL NUMBER OF TIMES THE SWITCH WAS PRESSED |
| INPUT CORRECTION METHOD | ROTATE AT LEAST ONE CLICK COUNTERCLOCKWISE THE STOP POSITION IS A NEW START POINT |

INPUT EXAMPLE (PASSWORD: 35192)

| STEP | ACTION |
|---|---|
| 1 | ROTATE THREE CLICKS CLOCKWISE, THEN PRESS THE SWITCH |
| 2 | ROTATE FIVE CLICKS CLOCKWISE, THEN PRESS THE SWITCH |
| 3 | ROTATE ONE CLICK CLOCKWISE, THEN PRESS THE SWITCH |
| 4 | ROTATE NINE CLICKS CLOCKWISE, THEN PRESS THE SWITCH |
| 5 | ROTATE TWO CLICKS CLOCKWISE, THEN PRESS THE SWITCH |

PROCESS EXAMPLE 2

| | |
|---|---|
| INPUT DEVICE | ROTARY ENCODER PROVIDED WITH A SWITCH |
| INPUT OF A NUMERIC VALUE | NUMBER OF CLICKS OBTAINED BY CLOCKWISE ROTATION BEFORE ROTATING AT LEAST ONE CLICK COUNTERCLOCKWISE (THE STOP POSITION FOLLOWING COUNTERCLOCKWISE ROTATION IS A NEW START POINT) |
| DETERMINATION OF INPUT TERMINATION | VIA TOTAL NUMBER OF COUNTERCLOCKWISE ROTATIONS |
| INPUT CORRECTION METHOD | A PUSH ON THE SWITCH THE CURRENT POSITION IS A NEW START POINT |

INPUT EXAMPLE (PASSWORD: 35192)

| STEP | ACTION |
|---|---|
| 1 | ROTATE THREE CLICKS CLOCKWISE, THEN ROTATE AT LEAST ONE CLICK COUNTERCLOCKWISE |
| 2 | ROTATE FIVE CLICKS CLOCKWISE, THEN ROTATE AT LEAST ONE CLICK COUNTERCLOCKWISE |
| 3 | ROTATE ONE CLICK CLOCKWISE, THEN ROTATE AT LEAST ONE CLICK COUNTERCLOCKWISE |
| 4 | ROTATE NINE CLICKS CLOCKWISE, THEN ROTATE AT LEAST ONE CLICK COUNTERCLOCKWISE |
| 5 | ROTATE TWO CLICKS CLOCKWISE, THEN ROTATE AT LEAST ONE CLICK COUNTERCLOCKWISE |

FIG. 4

PROCESS EXAMPLE 3

| | |
|---|---|
| INPUT DEVICE | ROTARY ENCODER PROVIDED WITH A SWITCH |
| INPUT OF A NUMERIC VALUE | NUMBER OF CLICKS OBTAINED BY ROTATING IN DIRECTION OPPOSITE TO THE PRECEDING DIRECTION (THE REVERSAL POSITION IS A NEW START POINT) |
| DETERMINATION OF INPUT TERMINATION | VIA TOTAL NUMBER OF REVERSAL ROTATIONS |
| INPUT CORRECTION METHOD | A PUSH ON THE SWITCH THE CURRENT POSITION IS A NEW START POINT |

INPUT EXAMPLE (PASSWORD: 35192)

| STEP | ACTION |
|---|---|
| 1 | ROTATE THREE CLICKS CLOCKWISE |
| 2 | ROTATE FIVE CLICKS COUNTERCLOCKWISE |
| 3 | ROTATE ONE CLICK CLOCKWISE |
| 4 | ROTATE NINE CLICKS COUNTERCLOCKWISE |
| 5 | ROTATE TWO CLICKS CLOCKWISE, THEN ROTATE AT LEAST ONE CLICK COUNTERCLOCKWISE |

*FIG. 5*

PROCESS EXAMPLE 4

| | |
|---|---|
| INPUT DEVICE | ROTARY ENCODER PROVIDED WITH A SWITCH |
| INPUT OF A NUMERIC VALUE | NUMBER OF CLICKS OBTAINED BY COUNTERCLOCK-WISE ROTATION SPECIFIES A DIGIT POSITION NUMBER OF CLICKS OBTAINED BY CLOCKWISE ROTATION INPUTS A NUMERIC VALUE (THE STOP POSITION FOLLOWING COUNTERCLOCKWISE ROTATION IS A NEW START POINT) |
| DETERMINATION OF INPUT TERMINATION | A PUSH ON THE SWITCH |
| INPUT CORRECTION METHOD | PREVIOUS INPUT IN A DESIRED DIGIT MAY BE CORRECTED UNTIL THE SWITCH IS PRESSED |

INPUT EXAMPLE (PASSWORD: 35192)

| STEP | ACTION |
|---|---|
| 1 | ROTATE ONE CLICK COUNTERCLOCKWISE, THEN ROTATE THREE CLICKS CLOCKWISE |
| 2 | ROTATE TWO CLICKS COUNTERCLOCKWISE, THEN ROTATE FIVE CLICKS CLOCKWISE |
| 1 | ROTATE ONE CLICK COUNTERCLOCKWISE, THEN ROTATE THREE CLICKS CLOCKWISE |
| 2 | ROTATE TWO CLICKS COUNTERCLOCKWISE, THEN ROTATE FIVE CLICKS CLOCKWISE |
| 3 | ROTATE THREE CLICKS COUNTERCLOCKWISE, THEN ROTATE ONE CLICK CLOCKWISE |
| 4 | ROTATE FOUR CLICKS COUNTERCLOCKWISE, THEN ROTATE NINE CLICKS CLOCKWISE |
| 5 | ROTATE FIVE CLICKS COUNTERCLOCKWISE, THEN ROTATE TWO CLICKS CLOCKWISE, THEN PRESS THE SWITCH |

*FIG. 6*

PROCESS EXAMPLE 5

| | |
|---|---|
| INPUT DEVICE | ROTARY ENCODERS AS MANY AS THE NUMBER OF DIGITS AND A SWITCH |
| INPUT OF A NUMERIC VALUE | NUMBER OF CLICKS OBTAINED BY COUNTERCLOCKWISE ROTATION USING A ROTARY ENCODER FOR EACH DIGIT (NUMBER OF CLICKS OBTAINED BY COUNTERCLOCKWISE ROTATION IS SUBTRACTED) |
| DETERMINATION OF INPUT TERMINATION | A PUSH ON THE SWITCH |
| INPUT CORRECTION METHOD | PREVIOUS INPUT IN A DESIRED DIGIT MAY BE CORRECTED UNTIL THE SWITCH IS PRESSED |

INPUT EXAMPLE (PASSWORD: 35192)

| STEP | ACTION |
|---|---|
| 1 | ROTATE THE ROTARY ENCODER FOR THE FIRST DIGIT THREE CLICKS CLOCKWISE |
| 2 | ROTATE THE ROTARY ENCODER FOR THE SECOND DIGIT FIVE CLICKS CLOCKWISE |
| 3 | ROTATE THE ROTARY ENCODER FOR THE THIRD DIGIT ONE CLICK CLOCKWISE |
| 4 | ROTATE THE ROTARY ENCODER FOR THE FOURTH DIGIT NINE CLICKS CLOCKWISE |
| 5 | ROTATE THE ROTARY ENCODER FOR THE FIFTH DIGIT TWO CLICKS CLOCKWISE, THEN PRESS THE SWITCH |

*FIG. 7*